



Armed Forces College of Medicine

AFCM



Small intestine: Duodenum, Jejunum, Ilium & Mesentery

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Lecturer of Anatomy

INTENDED LEARNING OBJECTIVES (ILO)



•By the end of this lecture the student will be able to:

1. Describe parts, relations, peritoneal covering blood supply and lymphatic drainage of duodenum.
2. Differentiate between a loop of jejunum and ileum
3. Enumerate blood supply of jejunum and ileum
4. Discuss course and contents of mesentery

Key Points

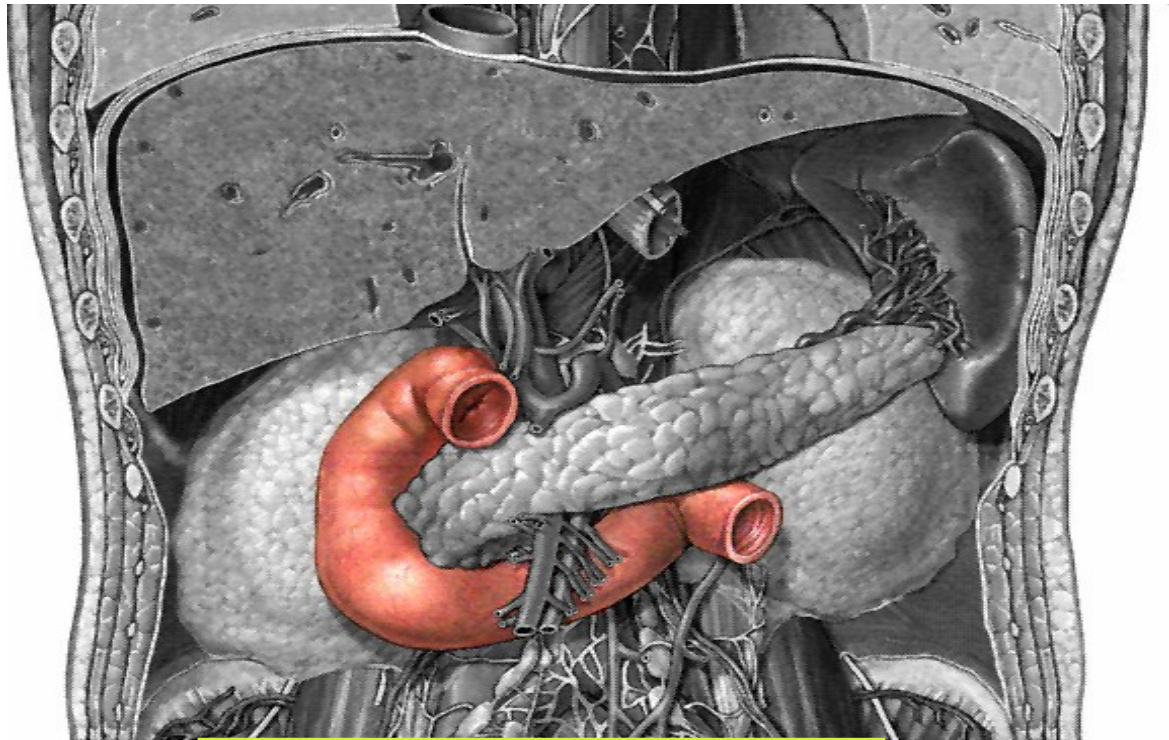


- 1. Anatomical features of duodenum**
- 2. Differences between jejunum and ileum**
- 3. Course and contents of mesentery of small intestine**

Small Intestine

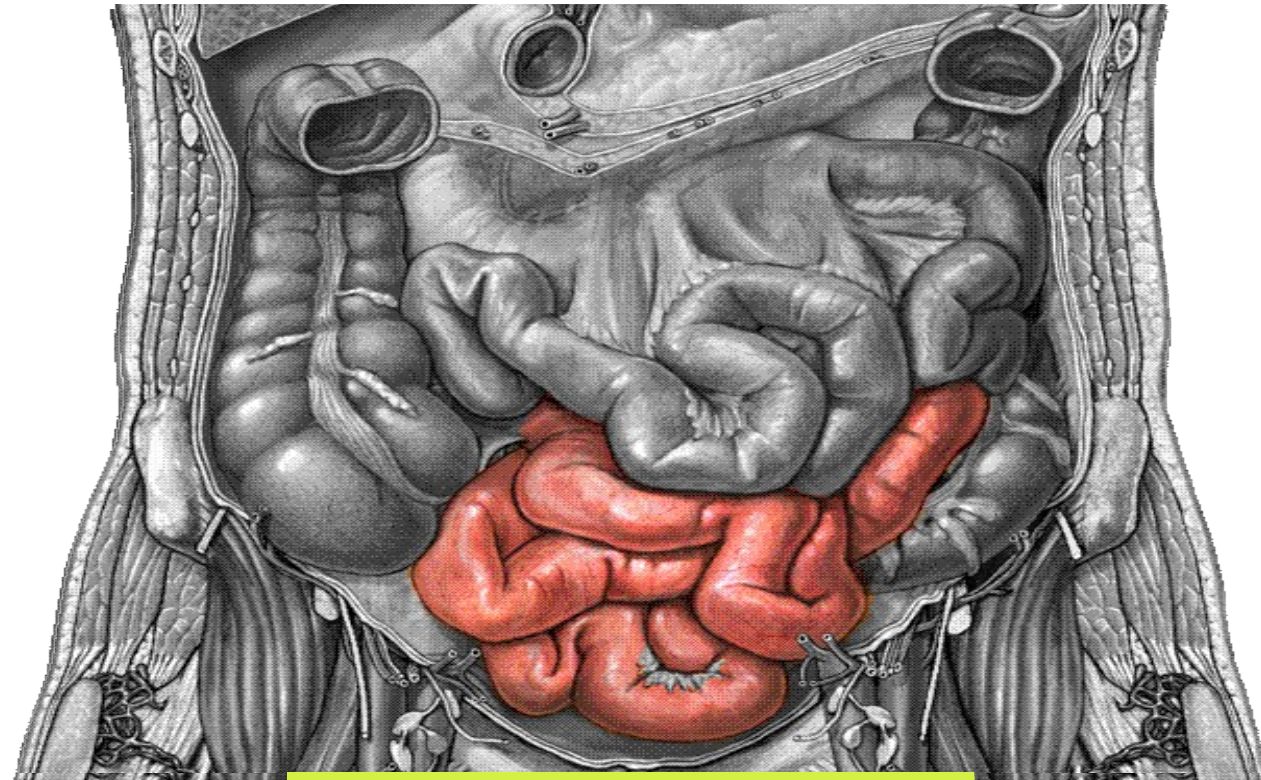


Upper fixed part



Duodenum

Lower mobile part



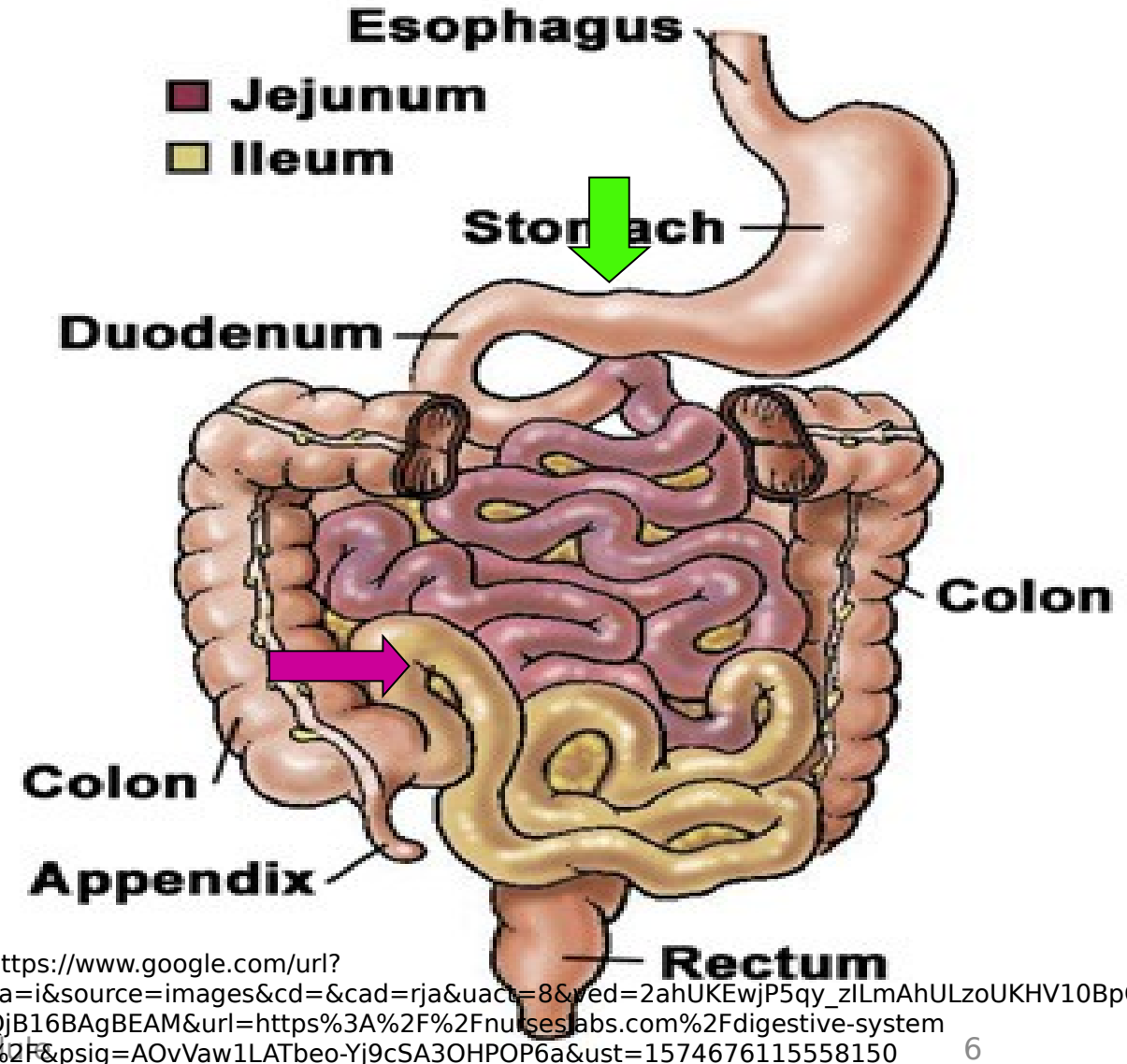
Ileum

Small Intestine



Extent:

- It extends from pyloric end of the stomach to ileo-caecal junction



Duodenum



10'' long, is the shortest, widest & most fixed part of small intestine

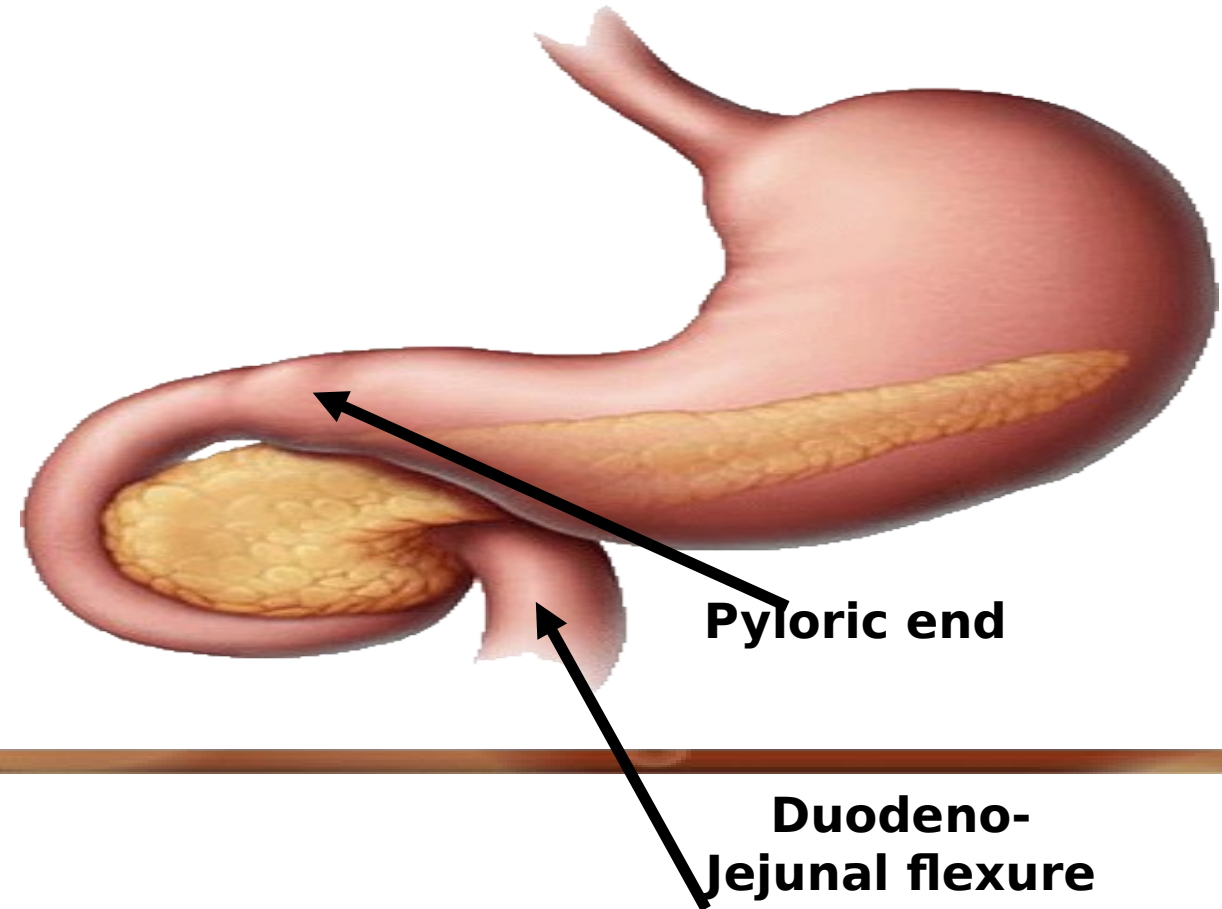
Begins at pyloric end of stomach

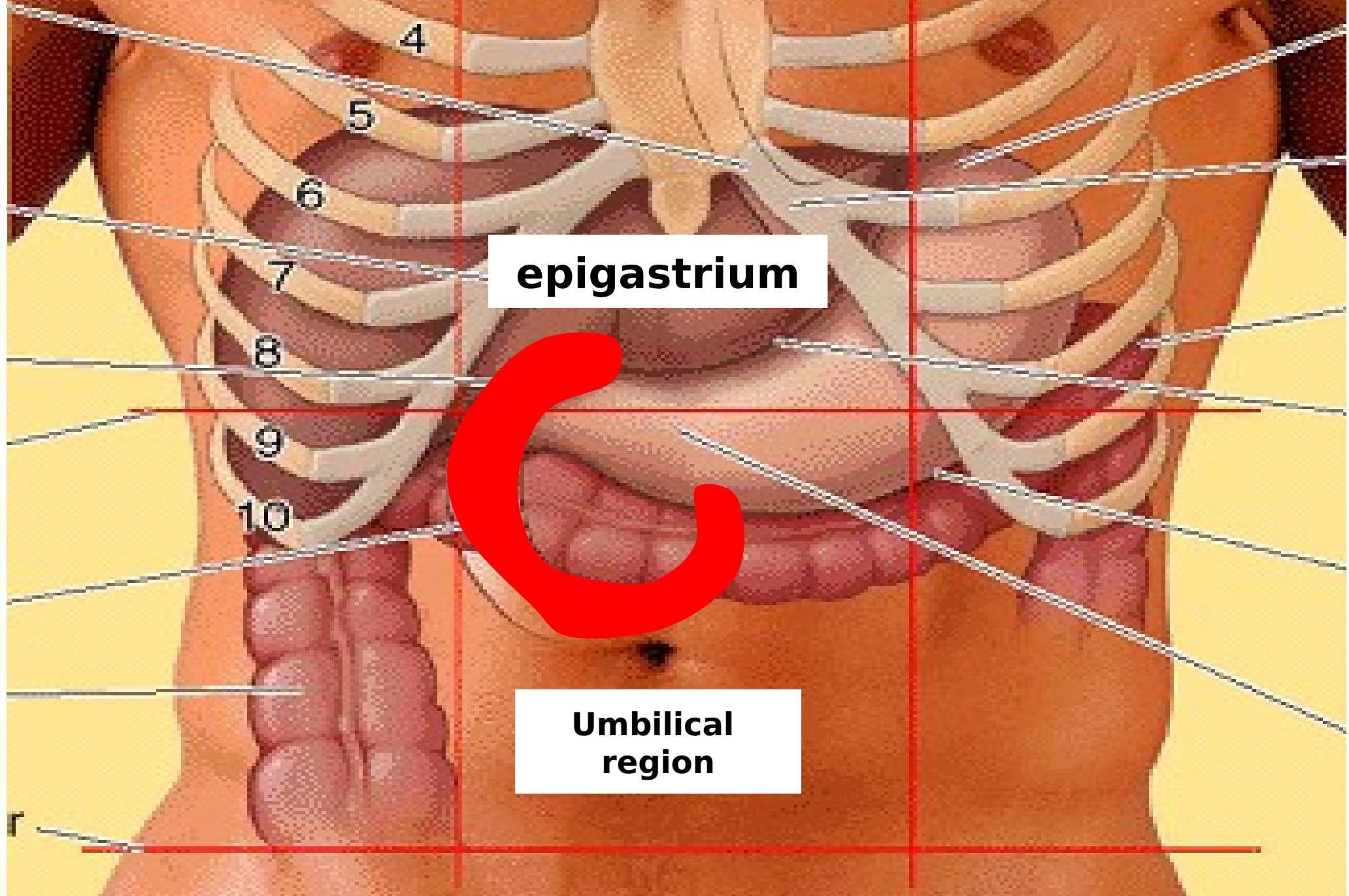
Ends at duodeno-jejunal flexure

■ Site & Shape:

➤ C-shaped surrounding head of pancreas

➤ Lies in umbilical & epigastric regions





epigastrium

**Umbilical
region**

Duodenum



Four parts :

1st (superior) part

□ 2 inches (opposite L1)

2nd (descending) part

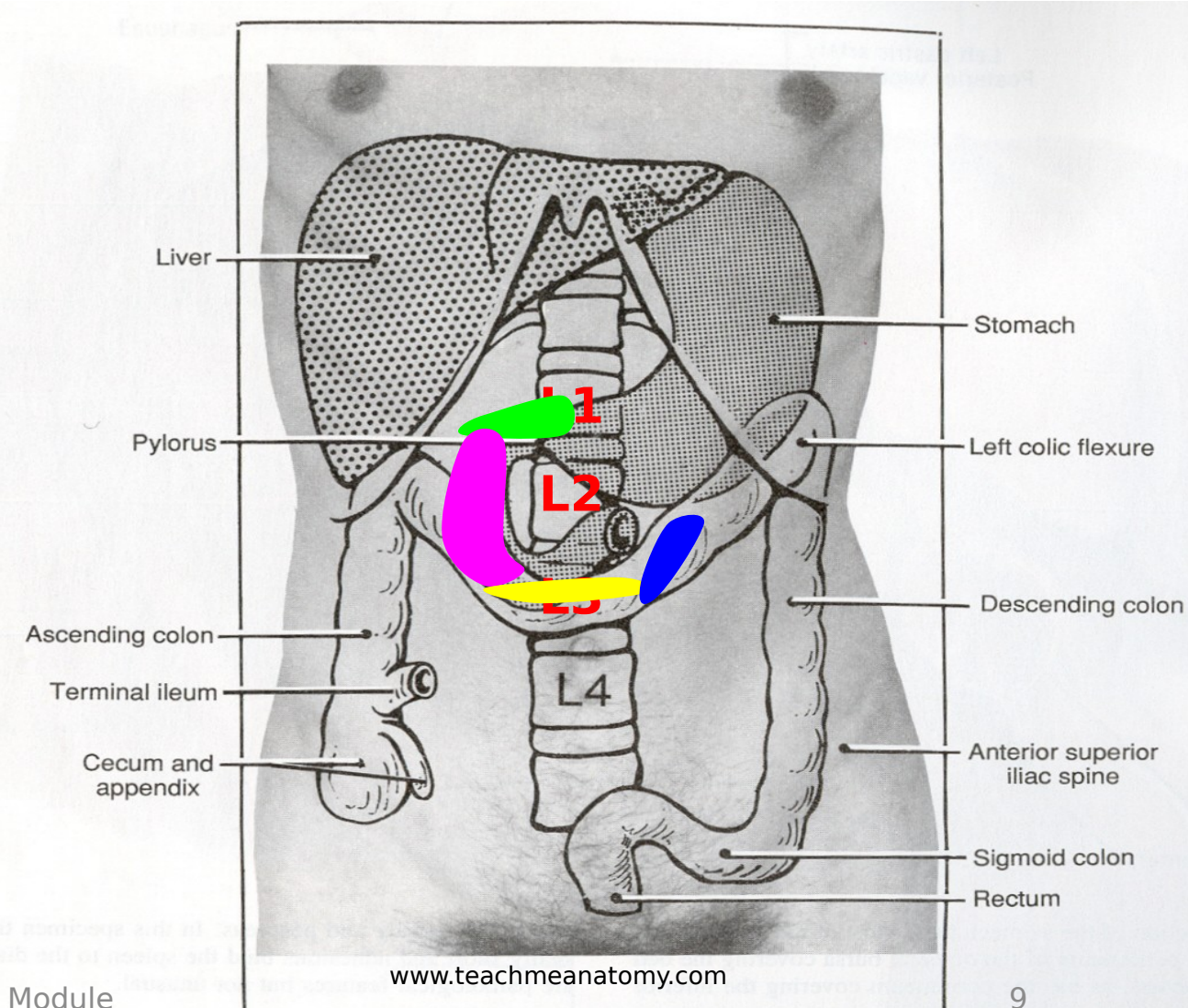
□ 3 inches (from L1 to L3)

3rd (horizontal) part

□ 4 inches (Opp L3)

4th (ascending) part

□ 1 inch (from L3 to L2)



Duodenum



□ Peritoneal covering:

Duodenum is

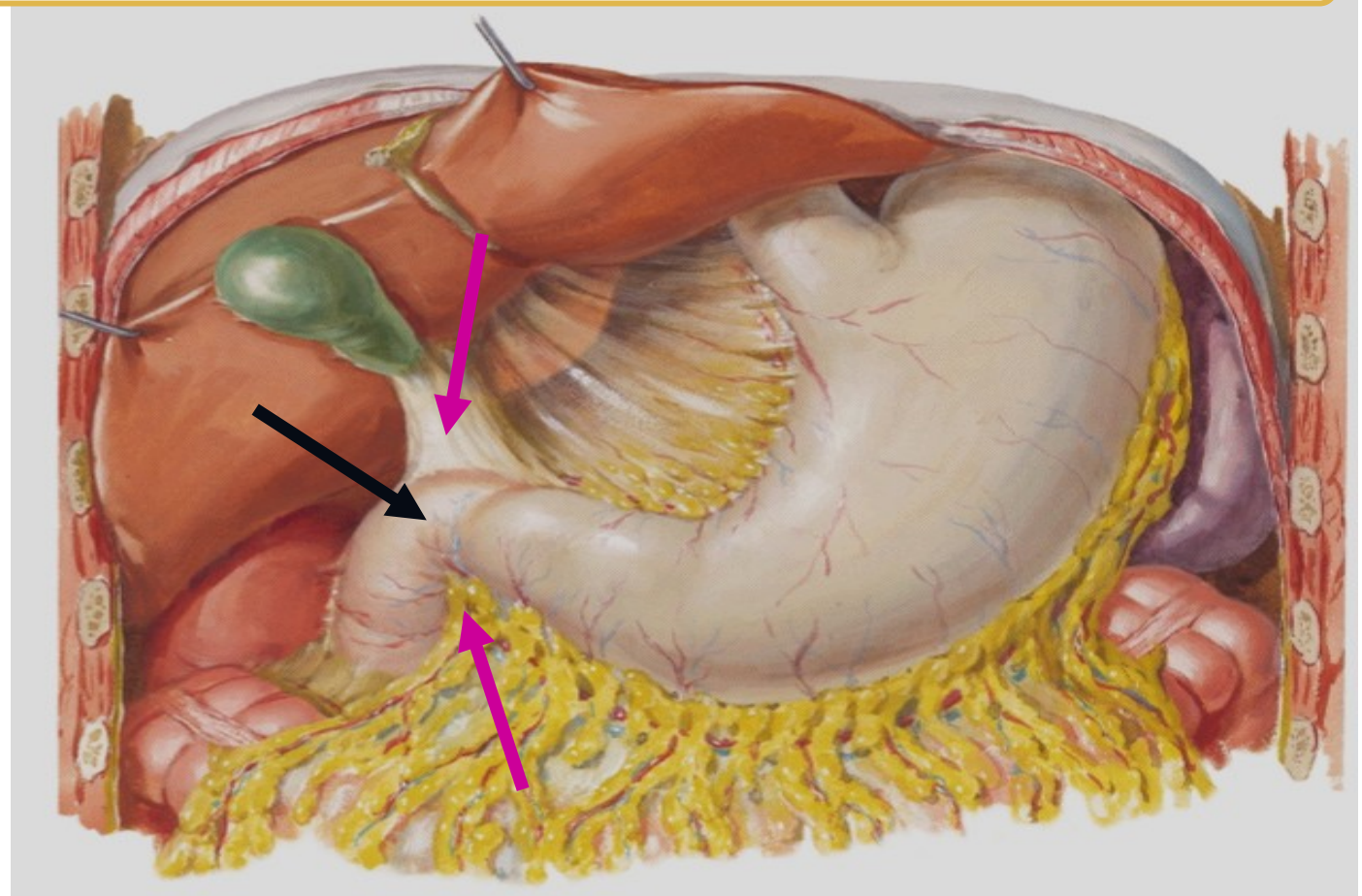
Retro-peritoneal & fixed to post abd wall

except

1st inch of 1st part

which is freely mobile
Greater omentum & has:

Lesser omentum



Atlas of human anatomy by Frank H. Netter, 6th Edition

1st Part of Duodenum

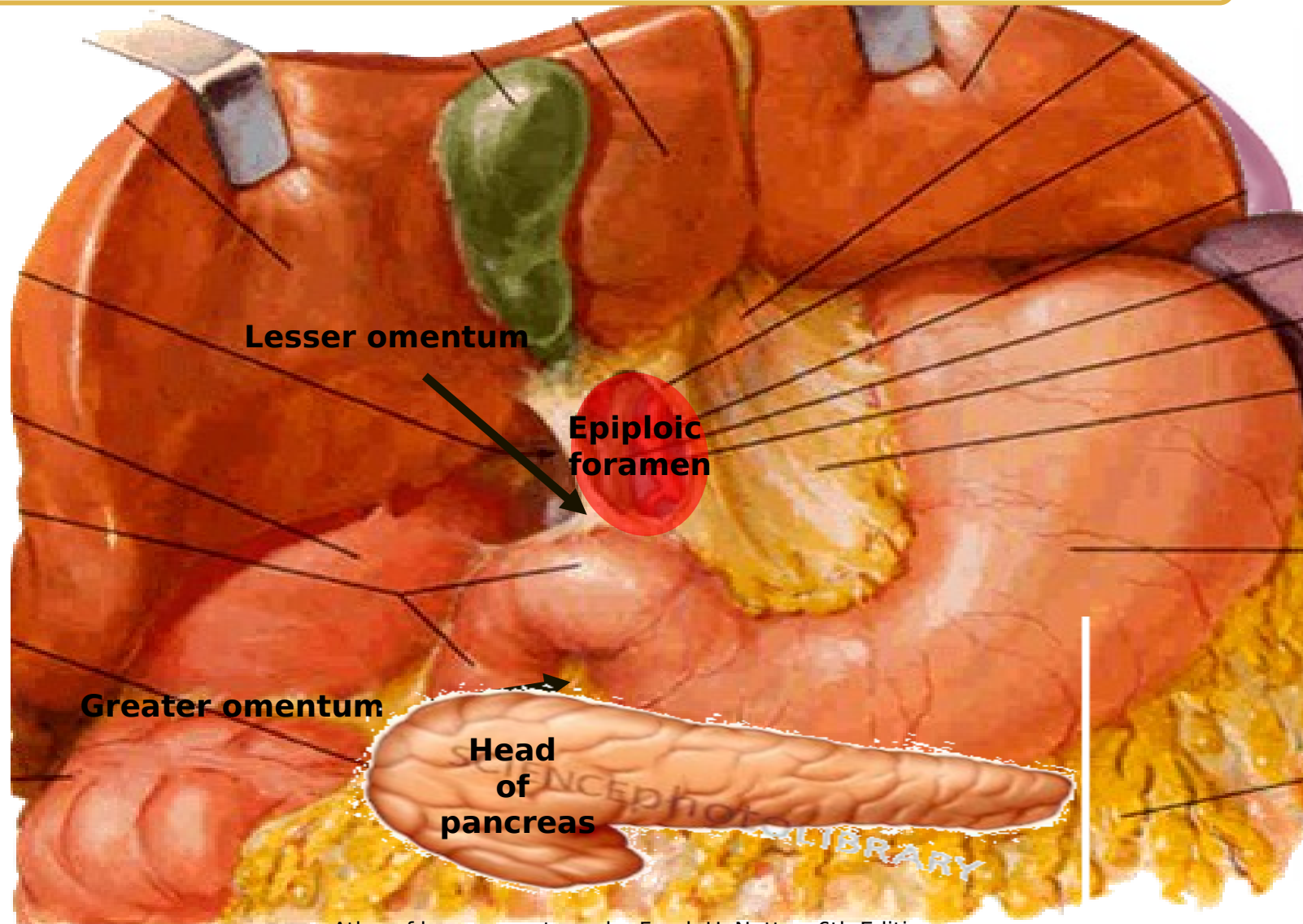


**Anterior
relations**

Posterior relations

**Superior
relations
&**

Inferior relations



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2nd Part of Duodenum

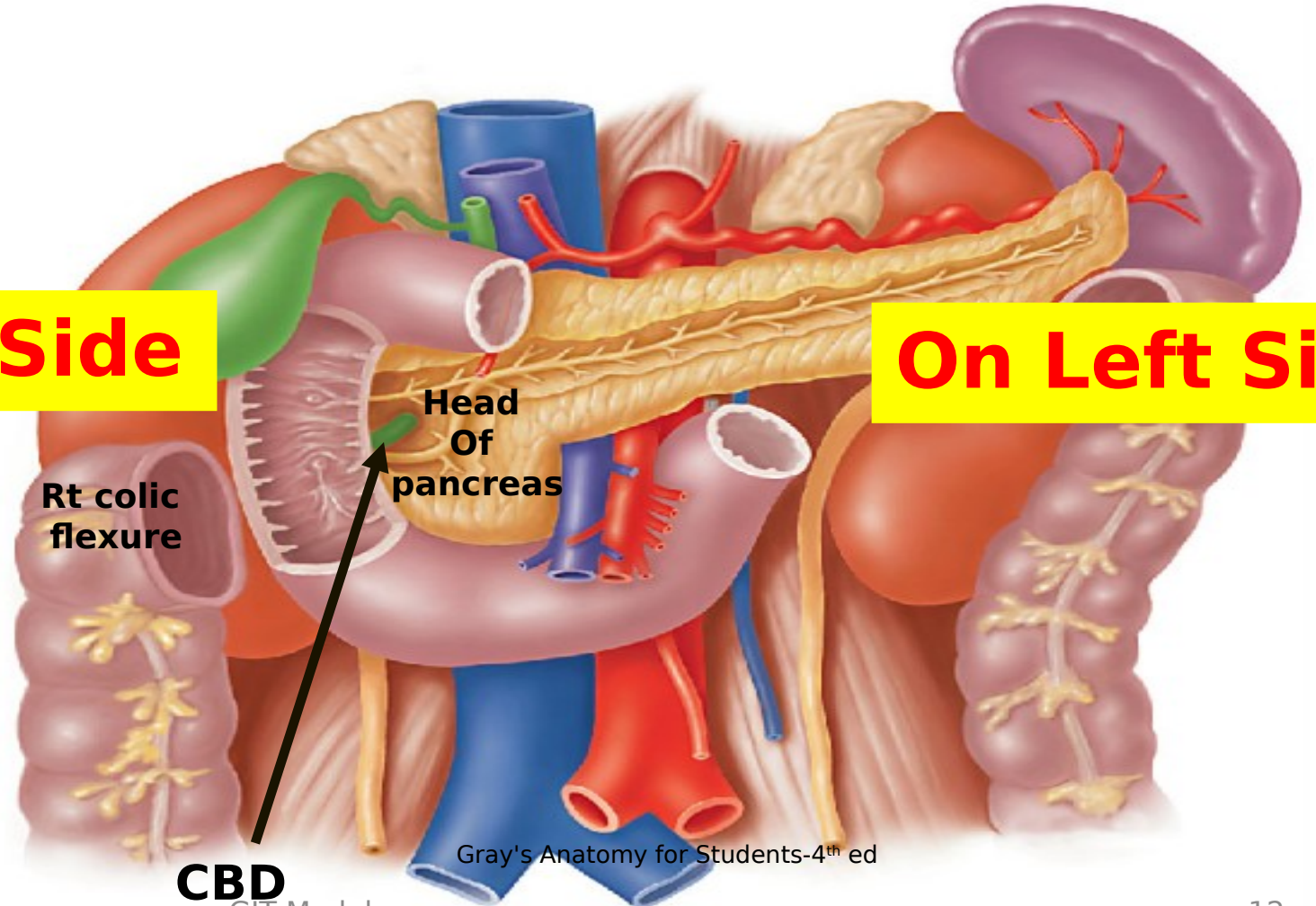


Anterior relations

**Posterior
relations**

On Right Side

On Left Side



Duodenum

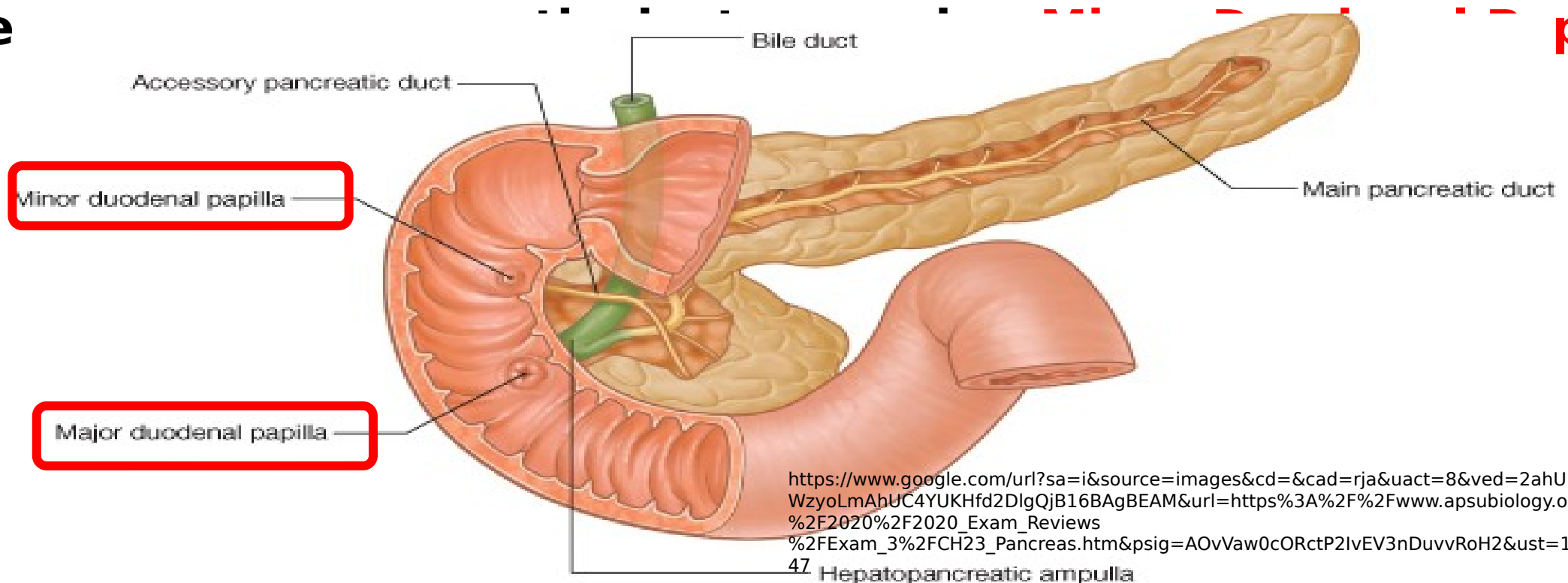
- The CBD & the main pancreatic duct unite to form **hepatopancreatic ampulla**

which opens in :

Major Duodenal Papilla

• The

pilla



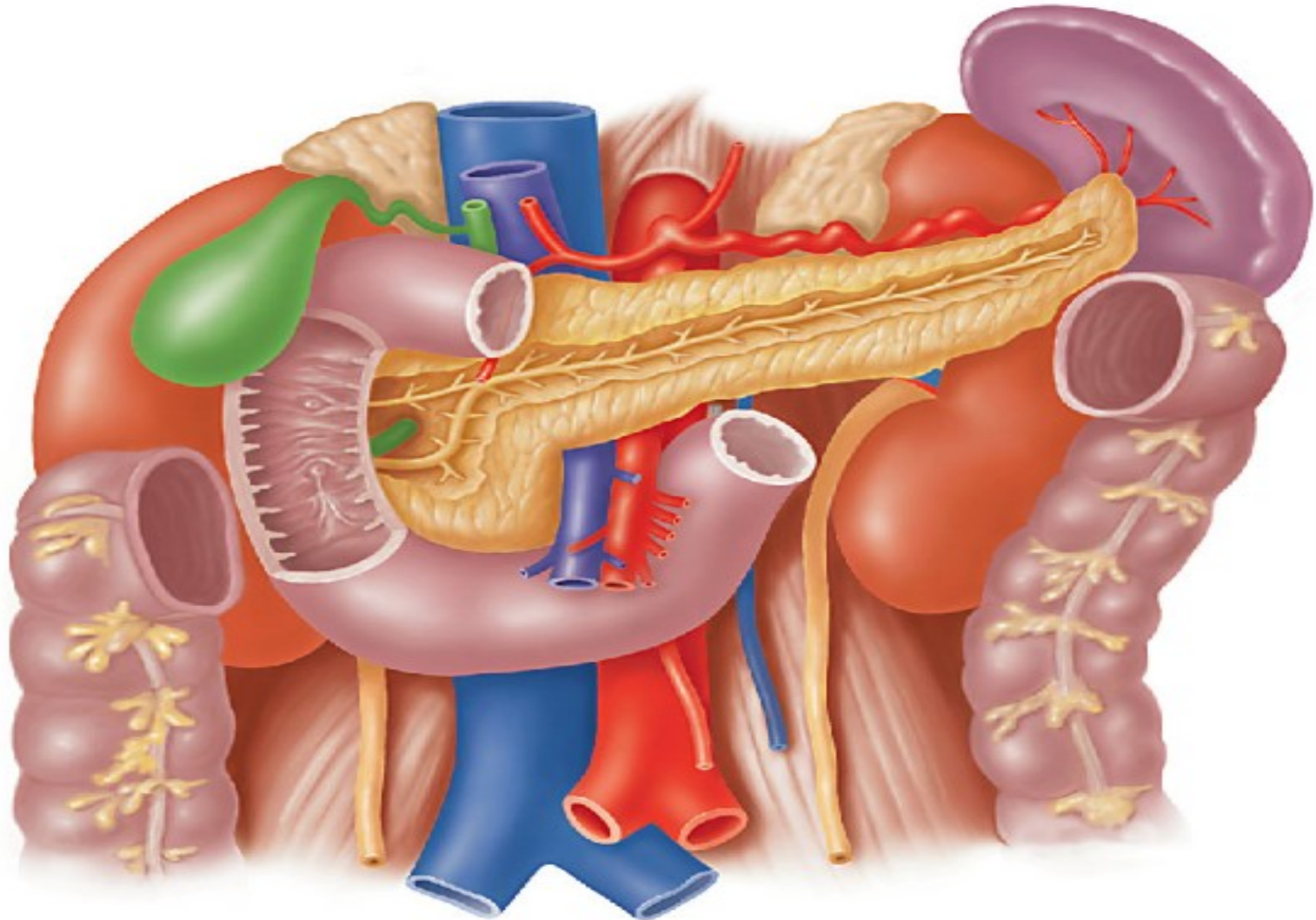
3rd Part of Duodenum

Anterior relations

- Sup mesenteric vessels (in root of mesentry)
- Loops of jejunum

Posterior relations

- Rt psoas major separated from it by **Rt ureter**
- IVC separated from it by **Right gonadal vessels**
- Abd aorta separated from it by **Inferior mesentric artery**



Gray's Anatomy for Students-4th ed

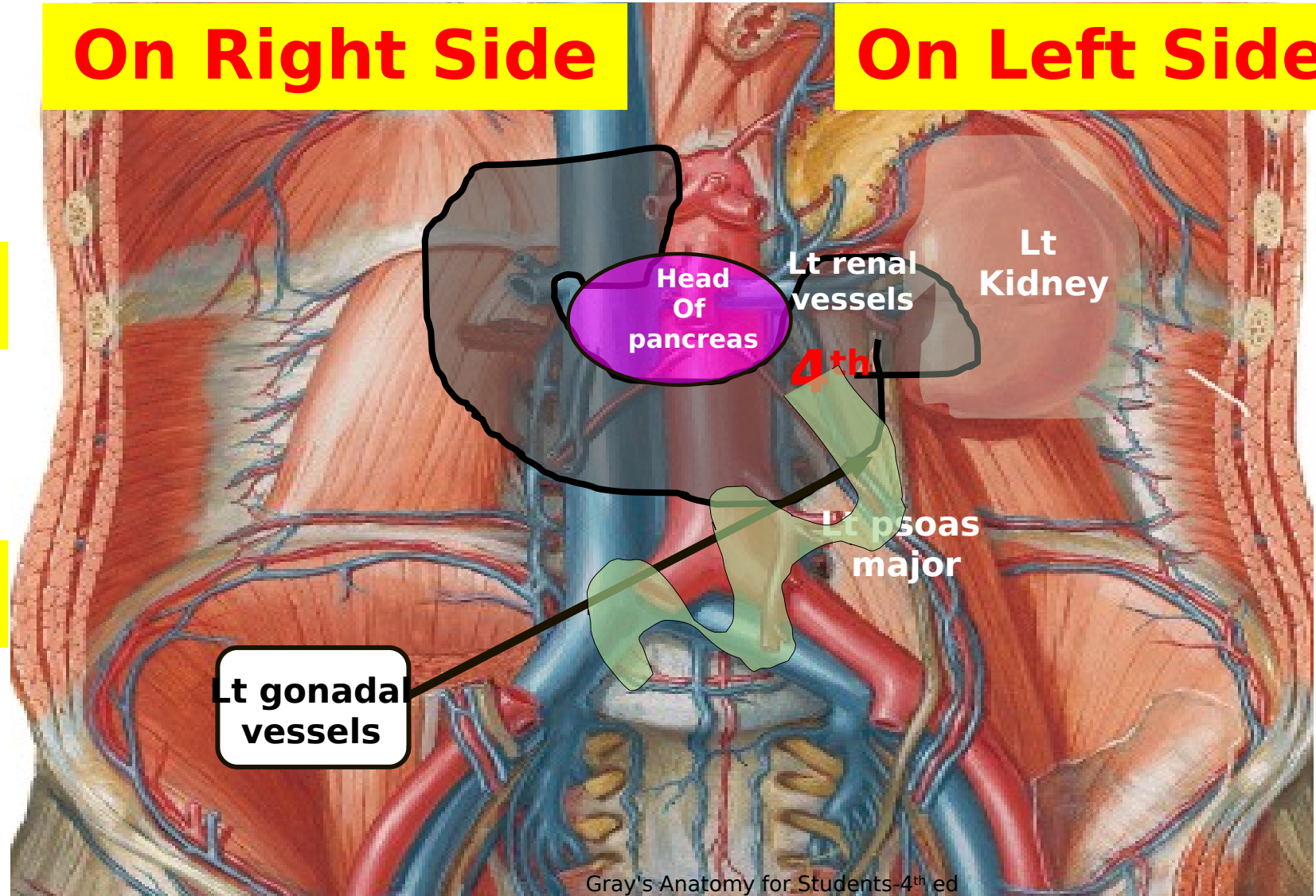
4th Part of Duodenum

Anterior relations

Posterior relations

On Right Side

On Left Side



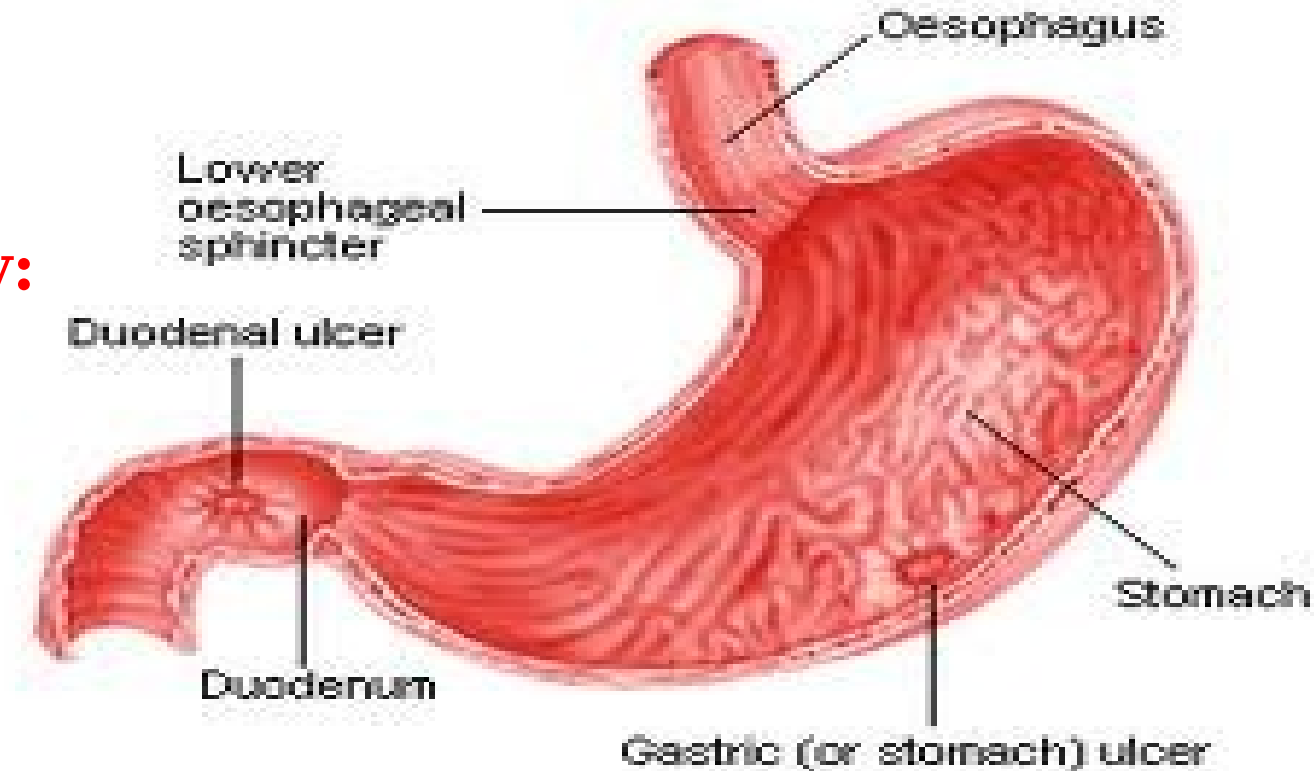
Duodenum

	Upper part (foregut)	Lower part (midgut)
Blood Supply	Sup. Pancreatico-duodenal (Coeliac trunk) + supra-duodenal	Inf. pancreatico-duodenal (SMA)
Lymphatic Drainage	Hepatic & Pyloric LN Coeliac LN	Sup mesenteric LN
Nerve Supply	Coeliac plexus	Sup mesenteric plexus

Duodenal Ulcer

**Ulcer in the post wall of 1st
part of duodenum leads to
its invasion**

**Erosion of Gastro-duodenal artery:
Severe hemorrhage**



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Radiograph of Duodenum (Barium Meal)

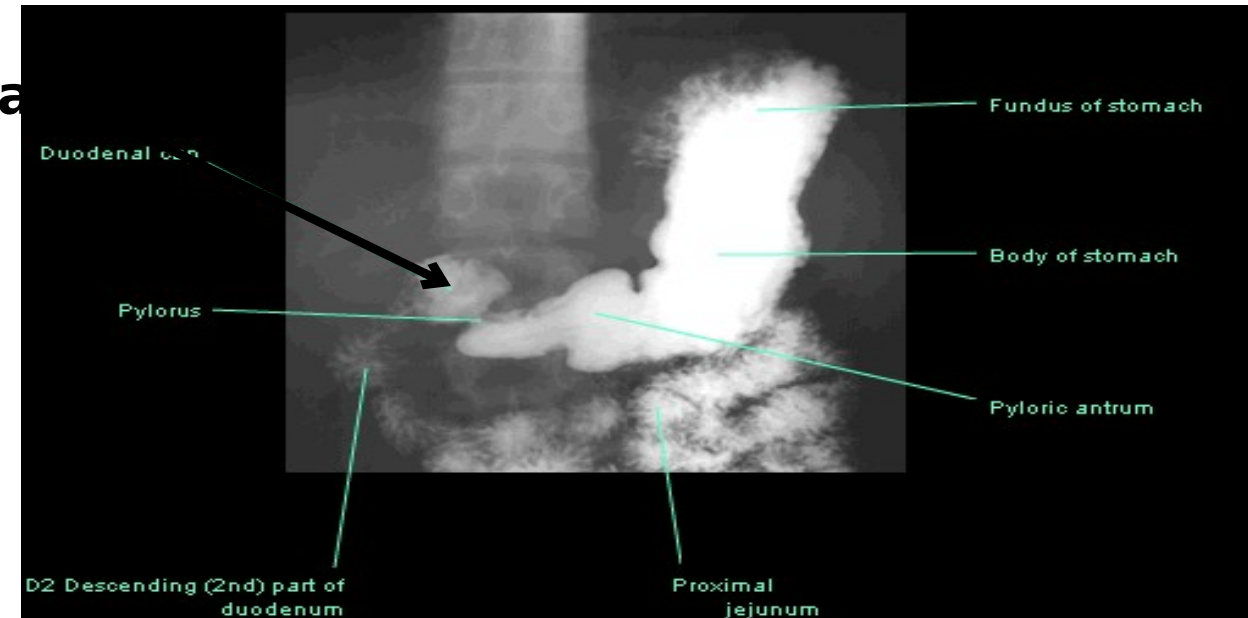


1st part of
duodenum
appears as a
triangular
shadow

→ Duodenal cap

→ distorted in
duodenal ulcer

Duodenal cap



<https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiT8onDyILmAhXOD2MBHQSaCjAQjB16BAgBEAM&url=http%3A%2F%2Fsinoomedicalassociation.org%2Fsurgery%2Fgastricsurgery%2Fid19.htm&psig=AOvVaw3r7LzWKN9UWwlsWoeNT3Z5&ust=1574675199328451>

Lecture Quiz



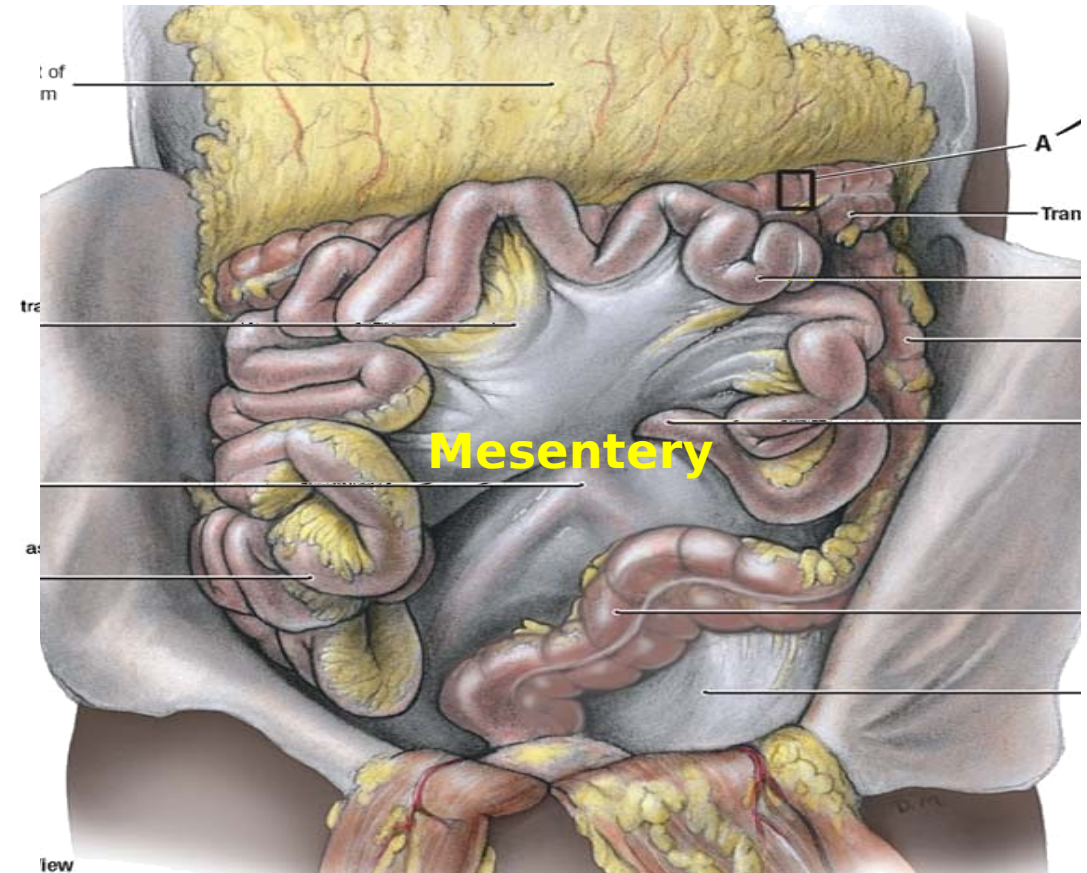
1st part of duodenum lies opposite:

- a) T12
- b) L1
- c) L2
- d) L3

Jejunum & Ileum



- 6 meters in length
- Separated from anterior abdominal wall by greater omentum & surrounded by large intestine
- **Completely covered** by peritoneum & has **mesentery** suspended it from post abd wall



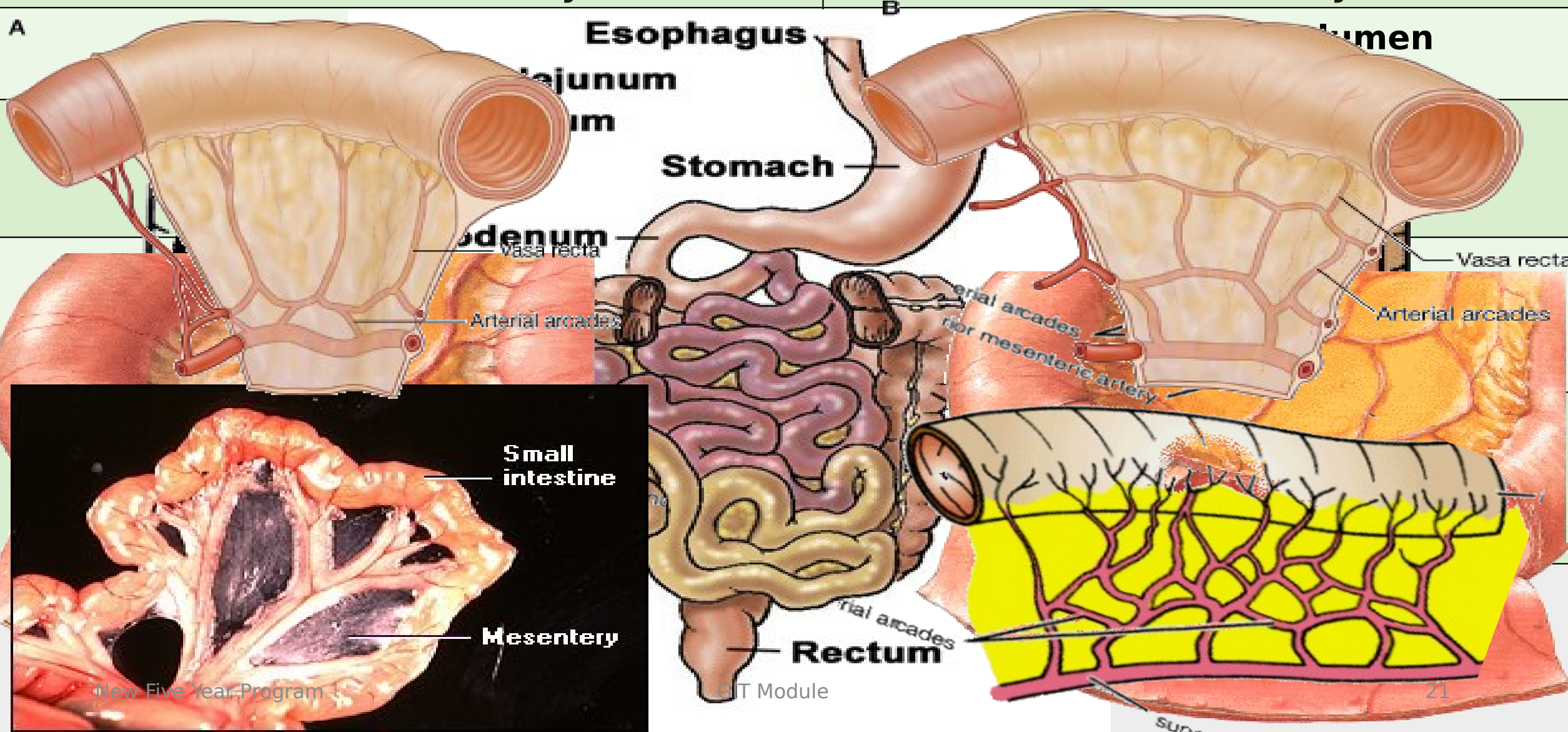
Gray's Anatomy for Students-4th ed

Jejunum

Proximal 2/5 lies in **upper** part of abdominal cavity

Ileum

Distal 3/5 lies in **lower** part of abdominal cavity



Lecture Quiz



Which of the followings is a characteristic feature of jejunum?

- a) Payer's patches
- b) Long vasa recta
- c) No plica circulares
- d) Narrow lumen

Mesentery of Small Intestine



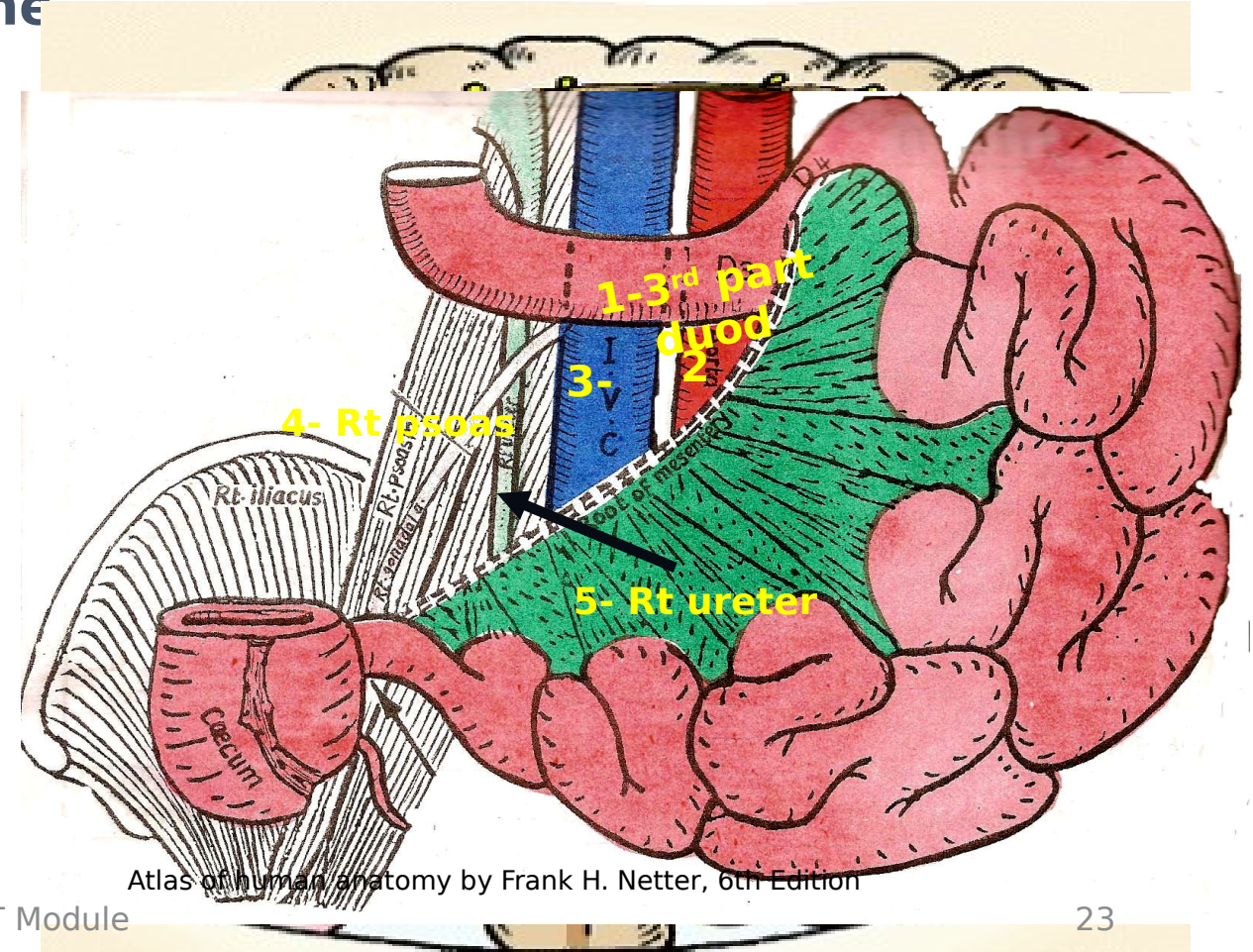
Def:

Fan-shaped double fold of peritoneum enclosing loops of small intestine

2 parts :

Root of mesentery (Attached border)

- 6'' long
- Attached to post abd wall from **duodeno-jejunal flexure** to **ileo-caecal junction**
- It cross the following structures successively :



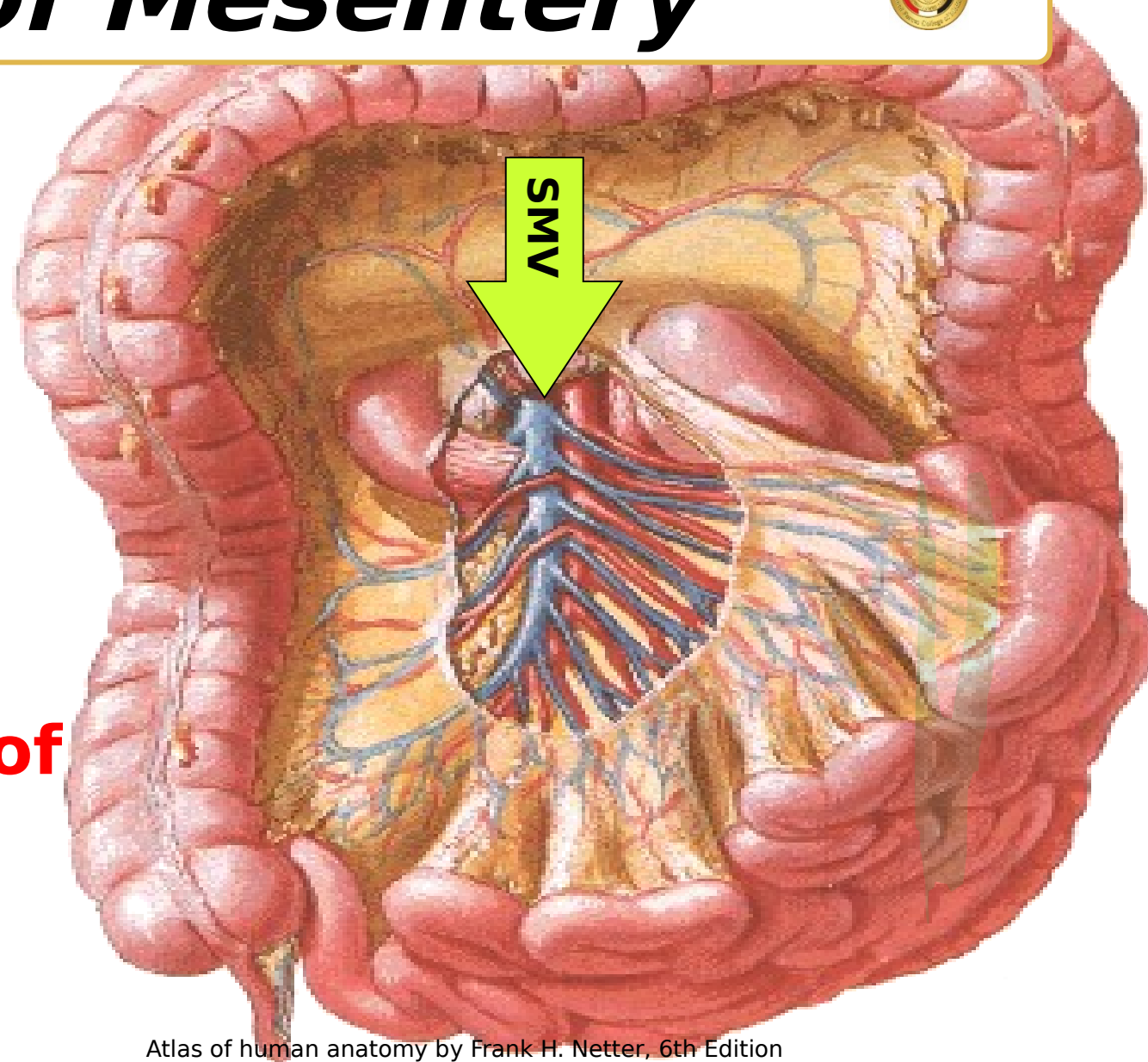
Contents of Mesentery



1- Coils of S.I (In free border)

2- Superior mesenteric vessels (In root of mesentery)

3- Jejunal & ileal branch of Superior mesenteric artery (forming arterial arcades)



Atlas of human anatomy by Frank H. Netter, 6th Edition

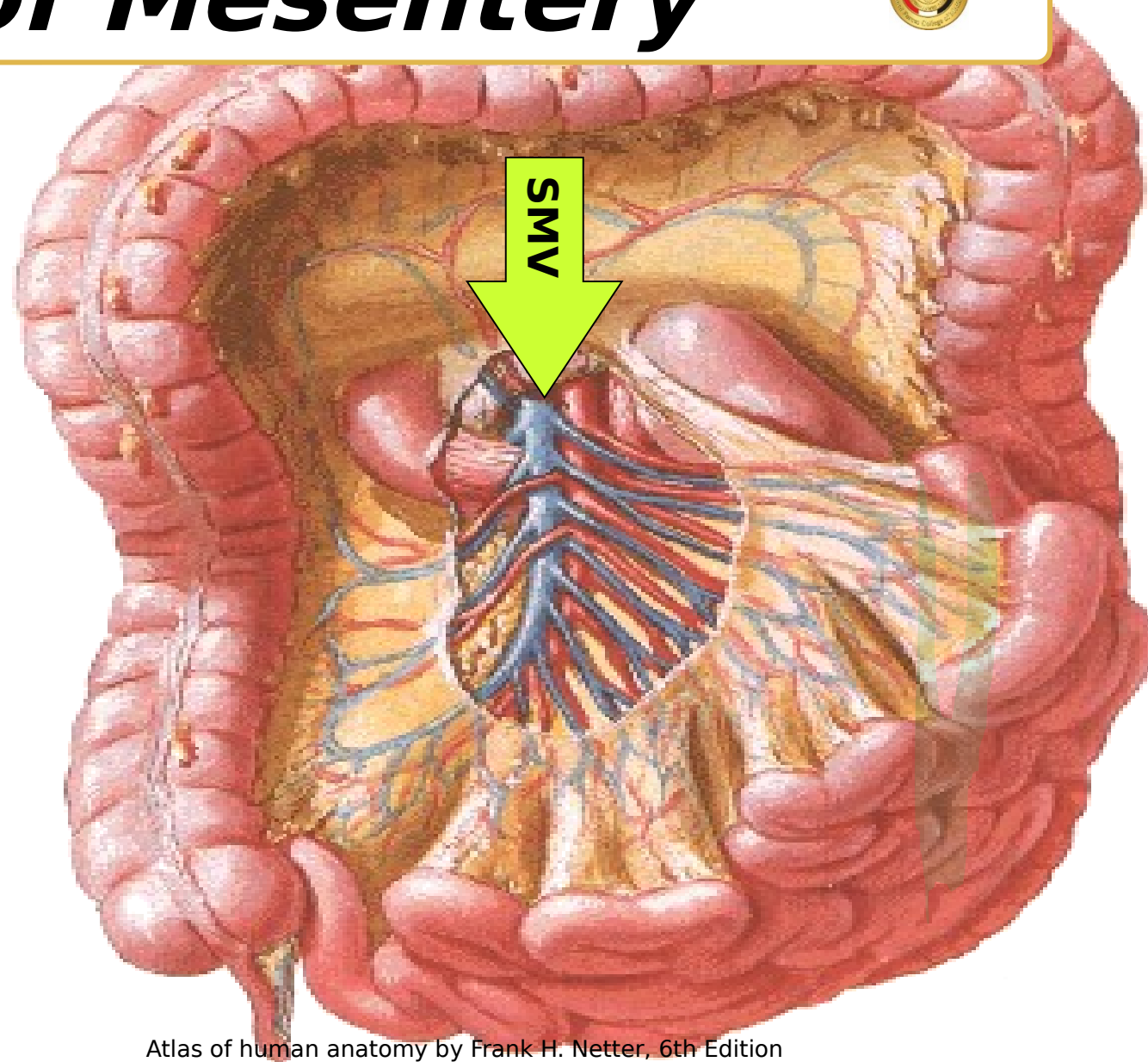
Contents of Mesentery



4- Mesenteric LN & Vessels

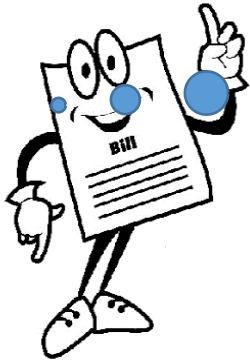
5- Extra-peritoneal Fat

**6- Autonomic fibers
(from superior
mesenteric plexus)**



Atlas of human anatomy by Frank H. Netter, 6th Edition

Lecture Summary



intestine:
duodenum,
jejunum
& ileum &

Describe parts, relations, peritoneal covering blood supply and lymphatic drainage of duodenum.

Differentiate between a loop of jejunum and ileum
Enumerate blood supply of jejunum and ileum

Discuss course and contents of mesentery

Suggested Readings

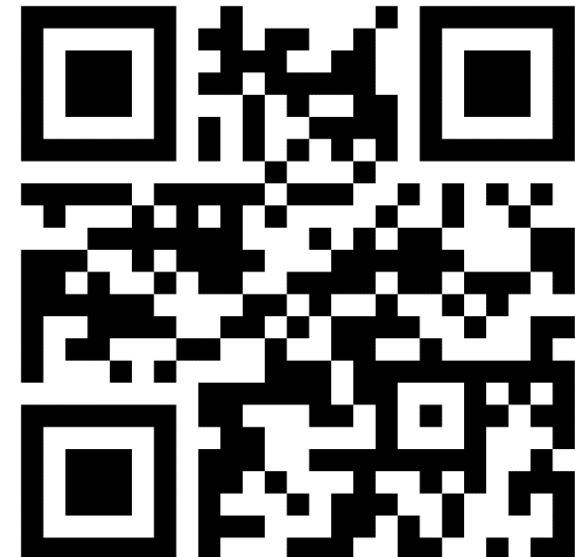


- 1. Gray's Anatomy for Students-4th Edition**
- 2. Atlas of human anatomy by Frank H. Netter,
6th Edition**
- 3. Clinical Anatomy for Medical Students,
Richard S. Snell, Pages**

- For further inquiries ***PLZ*** feel free to contact at any time through email

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Thank You